

Nicholson, Sharon, Florida State University

Examining the 19th Century Record of Sahel Rainfall in the Context of Global Change

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Abstract: This proposal examines climatic variability over West Africa during the 19th century, using a semi-quantitative data set developed by the P.I. This data is produced from a combination of documentary information and gauge data. Rainfall is characterized by a value ranging from -3 to +3. Although only semi-quantitative, this data set readily lends itself to simple statistical analyses, including spectral analysis. Using this data set, we compare rainfall variability in the historical (i.e., 19th-century) and modern records. In doing so, we consider both detection and attribution of climate change in the region. The proposed work should provide a better foundation upon which to determine whether the long decline in Sahel rainfall is a consequence of global warming.